



**GOVERNMENT OF WEST BENGAL**  
**Office Of the Assistant Engineer, P.W.D.**  
**Katwa Electrical Sub-Division,**  
**Katwa, Dist.: Purba Bardhaman, Pin-713130**  
**Email id: aekesd2019@gmail.com**

**Memo No: AE/KTW/497**

**Date: 26.09.2024**

To  
The Principal,  
Katwa College  
Duck Bungalow Road  
Purba Bardhama  
PIN-713130

**Sub: Conducting an Energy Audit of the electrical peripherals of the academic campus of Katwa College, Katwa, Purba Bardhaman and assessment of Electrical load upto the year 2023-24.**


**Ref: Letter received vide no. 562/MISC/17 dated 21.09.2024 from the Principal, Katwa College.**

**Sir,**

With reference to the subject and reference noted above, the undersigned would like to inform you that we have assessed the Electrical load as well as conducted an Energy Audit of the electrical peripherals of the academic campus of Katwa College as the external members of the Energy Audit Team. The junior Engineer, P.W.Dte.(Electrical),Katwa Electrical Sub-Division is the other external member of the Audit team.

The college has a very good Energy Conservation Policy.

Thanking you,

  
26.09.24  
Assistant Engineer, P.W.D  
Katwa Electrical Sub Division  
Assistant Engineer, P.W.D.  
Katwa Electrical Sub-Division  
Govt. of West Bengal

**KATWA COLLEGE**  
(Affiliated to the UNIVERSITY OF BURDWAN)



Principal's Office  
KATWA – 713 130  
PURBA BARDHAMAN  
Tel.: (03453) 255049  
E-mail: [katcoll2009@gmail.com](mailto:katcoll2009@gmail.com)  
Website: [www.katwacollege.ac.in](http://www.katwacollege.ac.in)

**ENERGY AUDIT REPORT**  
Date of Audit 26.09.24  
Audit Team

Member of Audit Team	Signature With Seal
Mr. Arka Das, Assistant Engineer, P.W..Dte, Katwa Electrical Sub-Division, Katwa, Dt. Purba-Bardhaman (External Member)	 26.09.24 Assistant Engineer, P.W.D. Katwa Electrical Sub-Division Govt. of West Bengal
Mr. Subrata Chowdhury, Junior Engineer, P.W..Dte, Katwa Electrical Sub-Division, Katwa, Dt. Purba-Bardhaman (External Member)	 26/09/24 Junior Engineer, P.W.D. Katwa Electrical Sub-Division Govt. of West Bengal
Dr.Nirmalendu Sarkar, Principal of Katwa College, Katwa, Purba-Bardhaman (Internal Member)	 26/09/24 Principal Katwa College Katwa, Purba Bardhaman
Mr. Utpal Das, Coordinator, IQAC, Katwa College, Katwa, Purba-Bardhaman (Internal Member)	 26/9/24 Coordinator IQAC Katwa College
Mr. Subhajit Sanyal, Member IQAC Katwa College, Katwa, Purba-Bardhaman (Internal Member)	 26.09.24 Member of IQAC Katwa College Katwa, Purba Bardhaman
Mr. Aritra Rudra (W.B.E.S) Govt. General Degree College Mongalkote, Purba-Bardhaman (External Member)	 26/09/24 ARITRA RUDRA (W.B.E.S) ASSISTANT PROFESSOR (GROUP-A) DEPARTMENT OF HIGHER EDUCATION GOVERNMENT OF WEST BENGAL
Dr. Kanchan Jana (G.B Member) Katwa College, Katwa, Purba-Bardhaman (Internal Member)	 26/9/24 Member Katwa College Governing Body

**Katwa College**  
**(Affiliated to The University of Burdwan)**

# **ENERGY AUDIT REPORT**

**(Academic Year 2021-2022,2022-2023,2023-2024)**



# **ENERGY AUDIT**



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### **OBJECTIVES OF ENERGY AUDIT:**

The primary objectives of energy audit are to identify and evaluate opportunities to reduce energy consumption per unit of product output and reduce operating costs through energy conservation and planning. Energy audit produces a bench-mark for managing energy in the organization and also provides the basis for planning a more effective use of energy throughout the organization. This auditing is an attempt to consume electrical power in our campus. Thus. Katwa College, Katwa is taking initiative to perform this auditing every year.

### **SCOPE OF THE ENERGY AUDIT:**

- 1) The scope of the energy audit includes an examination of the following areas.
- 2) Energy distribution network of electricity, water, Air Conditioners, fans, lights (LED and CFL), Xerox machines, computers, projectors, cameras, bore-well motors and fridge.
- 3) Energy utilization efficiency of all equipment's and buildings.
- 4) Efficient planning, operation, maintenance and housekeeping.



## **PREFACE:**

Data collection for energy audit of the Katwa College, Katwa, Campus was conceded by audit team of Katwa College, Katwa from 01/07/2023 to 30/06/2024. This audit was over sighted to inquire about convenience to progress the energy competence of the campus. To drop the energy utilization whilst cultivate or humanizing comfort, health and safety were of prime anxiety. This audit required to recognize mainly energy proficient appliances. Besides, many each day processes concerning common appliances have been provided which facilitate sinking the energy expenditure. The members of audit team were very helpful in completing the energy audit survey, which included all data that was collected from each classroom, laboratory and other miscellaneous rooms as well. The electrical equipment's and appliances that were taken under consideration included total no. of lights, fans,A.Cs, electronic instruments. and etc. in each room, chamber, corridor area and etc., together with the unit of electrical power that would be consumed by each of the component in the total electricity consumption.

## **ACKNOWLEDGEMENT:**

We extend our heartfelt gratitude to Dr. Nirmalendu Sarkar, Principal of the Katwa College, Katwa, Purba-Bardhaman for granting us the opportunity to conduct an energy audit of various facilities on the college campus. Our thanks also go to Mr. Arka Das. Assistant Engineer. P.W.D., and Mr. Subrata Chowdhury, Junior Engineer, P.W.D. Katwa Electrical Sub- Division, Katwa, for their invaluable support and guidance. Additionally, we appreciate the contributions of the IQAC Coordinator, NAAC Committee Convener. Energy Audit Coordinator, and other audit team members, whose guidance and support were Instrumental during the campus survey, data collection, network study, and measurements necessary for a successful energy audit

This report, prepared with sincere effort, details the relevant data collected during the energy audit study, including observations, analysis, and recommendations related to different campus facilities. Several Energy



Conservation Opportunities (Measures) have been identified and proposed during our study. When implemented, these options are expected to provide lasting benefits in terms of both energy and cost savings for the management.

We are delighted to submit this Detailed Energy Audit Report to our esteemed Officer in Charge. Dr. Nirmalendu Sarkar, Principal of the Katwa College, Katwa, Purba-Bardhaman, and we thank him for considering the implementation of the identified Energy Conservation Opportunities and recommendations following our thorough study and observations,

### **ABOUT THE COLLEGE:**

Katwa College accommodates thousands of first-generation learners from the economically backward section of the rural/ semi-rural population. The College tries to attract students from the minority community as far as possible. The College endeavours to inculcate communal harmony among the learners. The College achieved the status of an undergraduate College in 1959. The main campus comprises the Main Building, Science Building, B.Ed. Building, Boys' Common Room, Girls' Common Room, Canteen, Administrative Building and a Post Office. The second campus holds the Girls' Hostel, Principal's Quarter and Teaching Staff quarters. On the third campus stands the Boys' Hostel. The Sports Ground of the College forms the fourth campus of the College.

At the outset, the College was affiliated to Calcutta University until Burdwan University was established on 16th June 1960. The College was included into 2(f) and 12(b) categories under UGC Act 1956 in the year 1959. The College enjoys Grant-in-Aid financial status under the Government of West Bengal.

The College sporadically suffered from an acute staff shortage, both of teaching and non-teaching staff. The College has tried to address the crisis by employing Govt.-Approved Part-timers and Contractual lecturers and also by recruiting temporary teachers as and when required.



**ENERGY AUDIT TEAM:**

1. Mr. Arka Das, Assistant Engineer, P.W..Dte, Katwa Electrical Sub-Division, Katwa, Dt. Purba-Bardhaman (External Member)
2. Mr. Subrata Chowdhury, Junior Engineer, P.W..Dte, Katwa Electrical Sub-Division, Katwa, Dt. Purba-Bardhaman (External Member)
3. Dr. Nirmalendu Sarkar, Principal of the Katwa College, Katwa, Purba-Bardhaman (Internal Member)
4. Mr. Utpal Das, Coordinator, IQAC, Katwa College, Katwa, Purba-Bardhaman (Internal Member)
5. Dr. Subhajit Sanyal, Member of IQAC, Katwa College, Katwa, Purba-Bardhaman (Internal Member)
6. Aritra Rudra, WBES, GGDC Mongalkote Purba-Bardhaman (External Member)
7. Dr. Kanchan Jana, GB member of Katwa College, Katwa, Purba-Bardhaman (Internal Member)





## **NEED OF ENERGY AUDIT:**

Natural resources on earth are limited and consuming very sharply. It can be saved by employing energy efficiency and it is very necessary to prevent depletion of natural resources. The Electrical Audit of college buildings showed that the load of electrical equipment's been significant and should be taken some necessary step for reducing energy conservation. Today, energy conservation plays a very important role for energy conserving because energy consumption is increasing day by day but the natural resources are not increasing and also production is cannot meet the consumption People should aware about energy conservation and reduce energy consumption by adopting modern technologies

An energy audit is an inspection, survey and analysis of energy flows, for energy conservation in a building, process or system to reduce the amount of energy input into the system without negatively affecting the output (s). The task of energy audit undertaken by Katwa College has objective to identify energy saving & conservation opportunity with electrical network & equipment load study with measurement & conservation opportunity to save input energy cost.

## **EXPERIMENTAL AND DATA COLLECTION:**

The energy audit was conducted from 01/07/2023 to 30/06/2024 & reviewed implementation of energy saving & conservation opportunity already identified as well as quantified it.

1. Inventory of various electrical load.
2. WBSEDCL bill study & working out average cost of power.
3. Identification of various energy conservation measures & saving opportunity.



In this present report, college electricity audit has been executed and verified. Internal Audit team was formed and allotted for data collection and the entire campus was surveyed in the same way for the audit. In this survey, Main building (ground floor, 1<sup>st</sup> floor, 2<sup>nd</sup> floor), canteen and college premises were involved. In all building, each and every room was examined to note, the no. of fans, tube lights, computer, instrument AC, etc. The electrical equipment's that were put forth for the energy audit include practical laboratory. instrument, fans, air conditioners, Computers and etc., for this study.

We've calculated the exact contribution of energy consumption with respect to units consumed by each of the equipment such as, lights, fans, computers, instruments and etc., in comparison with the total requirement of electricity. We've studied all these above-mentioned electrical equipment's by collecting exact data from our survey. The Survey details are given elaborately, as below.

### Calculation of Energy Consumption in kWh:

Electric energy or power consumption can be calculated using the following basic formula  
Energy Consumption in Watt-hours = Power Rating in Wattage × Time in Hours

$$E = P \times t \dots (\text{Wh})$$

"Wh" is a small unit to measure the energy usage. To convert it to the basic electricity unit i.e. 1000 Watts per hour = 1kWh = 1 Unit of electricity, we divide it by 1000 i.e.

$$E = P \times t \div 1000 \dots (\text{kWh})$$

Where:

- . E = Electric Energy (Consumed power in kWh)
- . P = Power in Watts
- . t = Time in hours per day



**Daily Energy Consumption:**

**Power Consumption** (Daily) = Power Usage (watts) × Time (Hours)

**Example:**

A 40 watts fan used for 5 hours daily. The daily watt hour and kilowatt hour consumption is as follows.

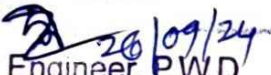
Daily power usage in Wh =  $40W \times 5 \text{ Hours}$  200 Wh/day

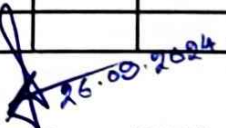
Daily power usage in kWh =  $200 \text{ Wh} / 1000$  = 0.20 kWh/day



# INVENTORY LIST AND LOAD CHART OF KATWA COLLEGE, KATWA, PURBA BARDHAMAN

Department	Room No	Single Tube Light	Double Tube Light	Celing Fan	6A Plug	16A Plug	Computer Board(3+1)	Holder	Ac Point	Exhaust Fan	6W LED Lamp	12W LED LAMP	Compound light	Wall Fan	
Ed. Building	Wattage	20	40	60	100	500	300	14	1200	60	6	12	72	60	
	G-033	2		3	6		6A-3	2							
	G-034	4		3	1		16A-1								
	G-035	3		3	1										
	corridor	8		3	2	1		4							
	G-036	1	6	6			1								
	G-037	1	6	6			1								
	G-038	1	6	6	1	1	1								
	FI/71	3		4			5	1							
	FI/72	2		2			3								
	FI/73	4	7	7	5	5	6	4							
	FI/75	2		1			1								
	corridor	2		2											
	F2/108	7		16	6		1								
	F2/109	6		4	4		2								
	F2/110	3		1			1								
Science Building															
	G-030	7		7	3	1									
	G-031	3		3			2								
	G-032	6	2	5			8								
	Toilet	2						1							

  
 26/09/24  
 Junior Engineer, P.W.D.  
 Katwa Electrical Sub-Division  
 Govt. of West Bengal

  
 26.09.2024  
 Assistant Engineer, P.W.D.  
 Katwa Electrical Sub-Division  
 Govt. of West Bengal

	Union Office(EMP)	3		4			2												
Zoology																			
	FI/065	3		2	1	5	3	1											
	FI/066	4		2	4														
	FI/067	3		2			2	1											
	FI/068	4		2	1	1													
	FI/069	7		4	10	2													
	FI/070	11		5	7														
	corridor	4		3	4														
	Toilet	1						2											
	F2/099	10		8	10	4	2												
	F2/100	6		5			1		3										
	F2/101	2		1	2	2													
	F2/102	3		1	2	1		1											
Main Building																			
	G-13			1	1			1											
Chemistry																			
	G-001	4	3	3			3												
	G-2	4		2	2	2	1												
	G-3	3		2	4	1													
	G-4	9		6	7	4	2												
	G-5	6		5	3	1	1												
	G-6	16		6	28	2													3
	G-7	6			16	7													2
	G-8	5		4			4												
	G-9	5		4	4	4	3												
	G/39	8					4												

Junior Engineer, P.W.D.  
Katwa Electrical Sub-Division  
Govt. of West Bengal

Assistant Engineer, P.W.D.  
Katwa Electrical Sub-Division  
Govt. of West Bengal









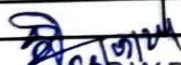
G.N.B.=04	6		6		3															
G.N.B.=05	2		2		2															
G.Flor corridor	7																			
G.N.B.=06	1		1		1	1				1										
Toilet	1									2										
N.B. FI/07		2	1		2															
N.B. FI/08		2	1		2															
N.B. FI/09		2	1		2															
FI/N.B.=10		2	1		2															
FI/N.B.=11		2	1		2															
FI/N.B.=12	10		8		3															
FI/N.B.=13		2	1		2															
FI/N.B.=14		2	1		2															
FI/N.B.=15		2	1		2															
Toilet Others	7				8					2										


New Girls Hostel

Junior Engineer, P.W.D.  
Katwa Electrical Sub-Division  
Govt. of West Bengal

Assistant Engineer, P.W.D.  
Katwa Electrical Sub-Division  
Govt. of West Bengal

F2/N.B.-16		2	1		2								
F2/N.B.-17		2	1		2								
F2/N.B.-18		2	1		2								
F2/N.B.-19		2	1		2								
F2/N.B.-20		2	1		2								
F2/N.B.-21	10		8		3								
F2/N.B.-22		2	1		2								
F2/N.B.-23		2	1		2								
F2/N.B.-24		2	1		2								
Toilet Others	7								1				
F3/N.B.=25		2	1		2								
F3/N.B.=26		2	1		2								
F3/N.B.=27		2	1		2								
F3/N.B.=28		2	1		2								
F3/N.B.=29		2	1		2								
F3/N.B.=30	10		8		3								

  
 Junior Engineer, P.W.D.  
 Katwa Electrical Sub-Division  
 Govt. of West Bengal


  
 Assistant Engineer, P.W.D.  
 Katwa Electrical Sub-Division  
 Govt. of West Bengal


	F3/N.B.=31		2	1			2						
	F3/N.B.=32		2	1			2						
	F3/N.B.=33		2	1			2						
	Toilet Others	6					4			1			
<b>Botany</b>													
	FI/059		1	2	4	1							
	FI/060	4	2	4	2	2							
	FI/061	4	3	4	1	1	1						
	FI/062	2		1	1	2		1					
	FI/063	7		5	2	2							
	FI/064	4	2	3	5	5							1
	FI/051				4	3							
	corridor	1		4	3	2							
<b>Geography</b>													
	G/027	2		1			11	3	1				
	G/028	3	4	5	6								
	G/029	5	1	2	3	3		1					
	corridor	2		1	5	2							
	G/040	4		3			2	1					
	G/041	4		2			2						
<b>Girls Common Room</b>													
			1	2				1					
	main indoor	10					1	6					8
<b>A.B.Das office</b>													
	FI/119	21	1	12	6	14	9	4	1	3			
	FI/118	2		1	3	5		1	1				

Junior Engineer, P.W.D.  
Katwa Electrical Sub-Division  
Govt. of West Bengal

Assistant Engineer, P.W.D.  
Katwa Electrical Sub-Division  
Govt. of West Bengal

	FI/120	3		2			2		1					
		3		6	13			1						
	FI/121				5		4	1	2		24			
	FI/122				6		5		2		24			
	FI/123	4		4		7	2	2	2					
	FI/124		1	1	1	1	1	1	1					
	FI/125		1	1	1	1	1	1	1					
	FI/126		1	1	1	1	1	1	1					
	FI/127						2		1			4		
	Stair	2												
	F2/128				10		1		7			100		
	F2/129	2		1			1							
	G/114						1							
	G/115	2		1			1							
	G/116	6		3	8									
	Canteen	19		16	4	6				1				
	Cycle Stand	6	21	1	4						3	30w 34		
													27	
	<b>Total nos</b>	643	359	613	364	124	338	57	28	24	51	104	27	9
	<b>Wattage</b>	12860	14360	36780	36400	62000	101400	798	33600	1440	306	1248	1944	540
	<b>Total Wattage</b>	303676												
	<b>Total Kilowatt</b>	303.676												
	<b>Maximum Demand</b>	151.838												

  
 Junior Engineer, P.W.D.  
 Katwa Electrical Sub-Division  
 Govt. of West Bengal

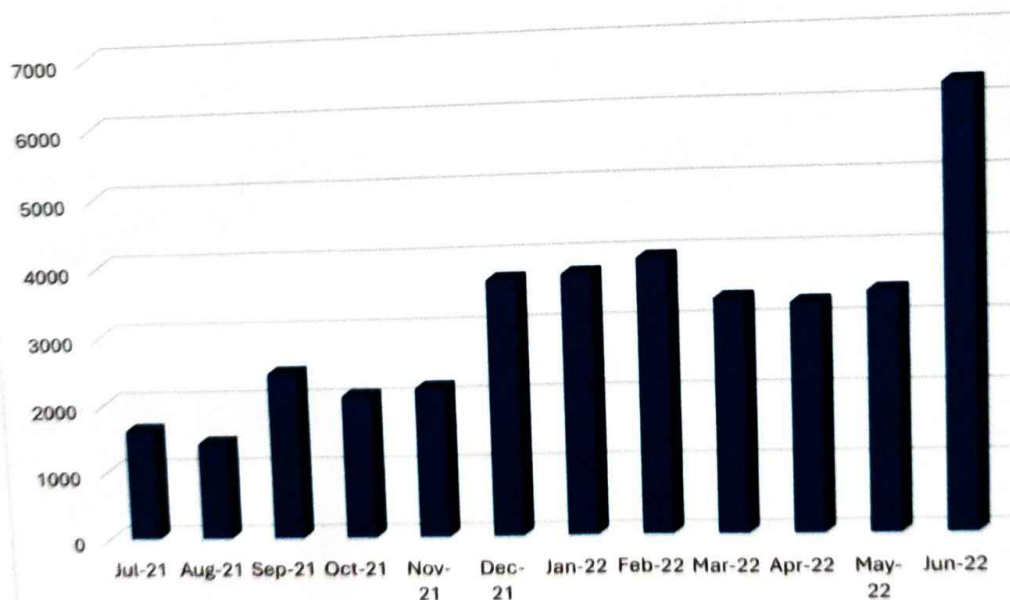
  
 Assistant Engineer, P.W.D.  
 Katwa Electrical Sub-Division  
 Govt. of West Bengal

## EB- Power Consumption

Year-2021-22

Month	Total Consumption in Unit (KWH)
Jul-21	1610.23
Aug-21	1410.23
Sep-21	2421.75
Oct-21	2071.75
Nov-21	2171.75
Dec-21	3698.96
Jan-22	3748.96
Feb-22	3948.96
Mar-22	3355.1
Apr-22	3280.1
May-22	3430.1
Jun-22	6291.65
<b>Total-</b>	<b>37439.54</b>

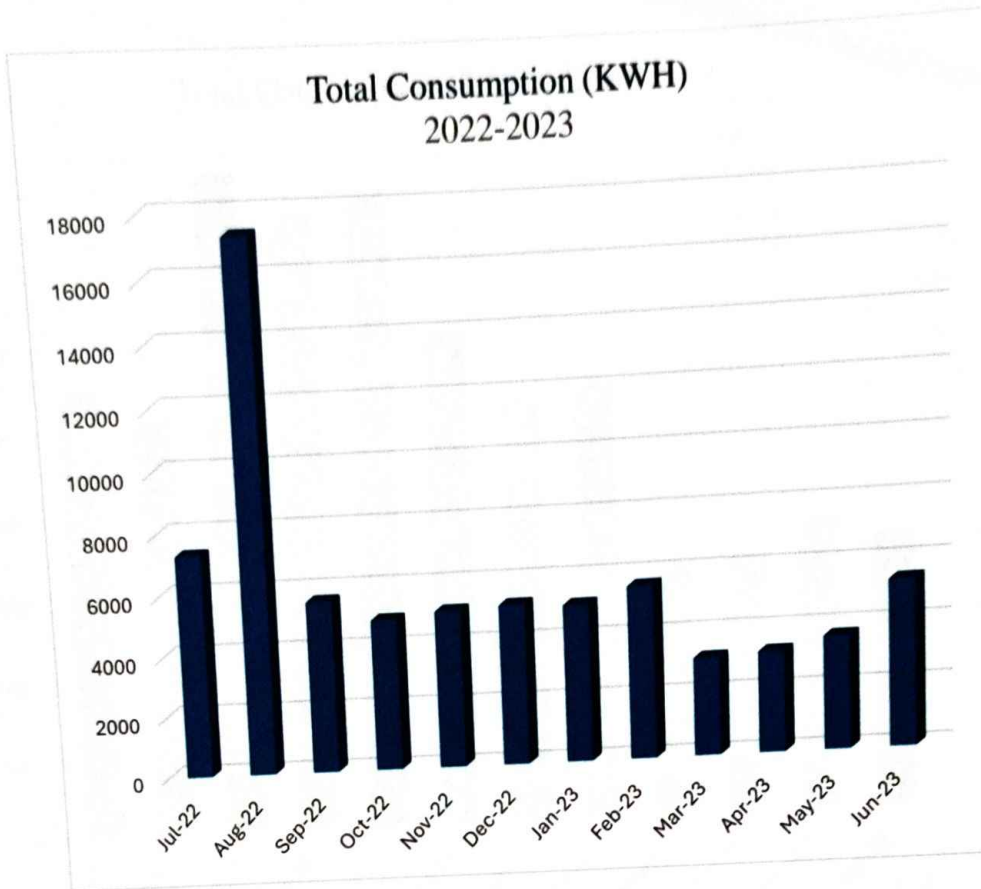
Total Consumption (KWH)  
2021-2022



**Year-2022-23**

<b>Month</b>	<b>Total Consumption in Unit (KWH)</b>
Jul-22	7291.98
Aug-22	17291.98
Sep-22	5624.31
Oct-22	4924.31
Nov-22	5124.31
Dec-22	5229.31
Jan-23	5129.31
Feb-23	5629.31
Mar-23	3181.97
Apr-23	3281.97
May-23	3681.97
Jun-23	5400.47
<b>Total-</b>	<b>71791.2</b>



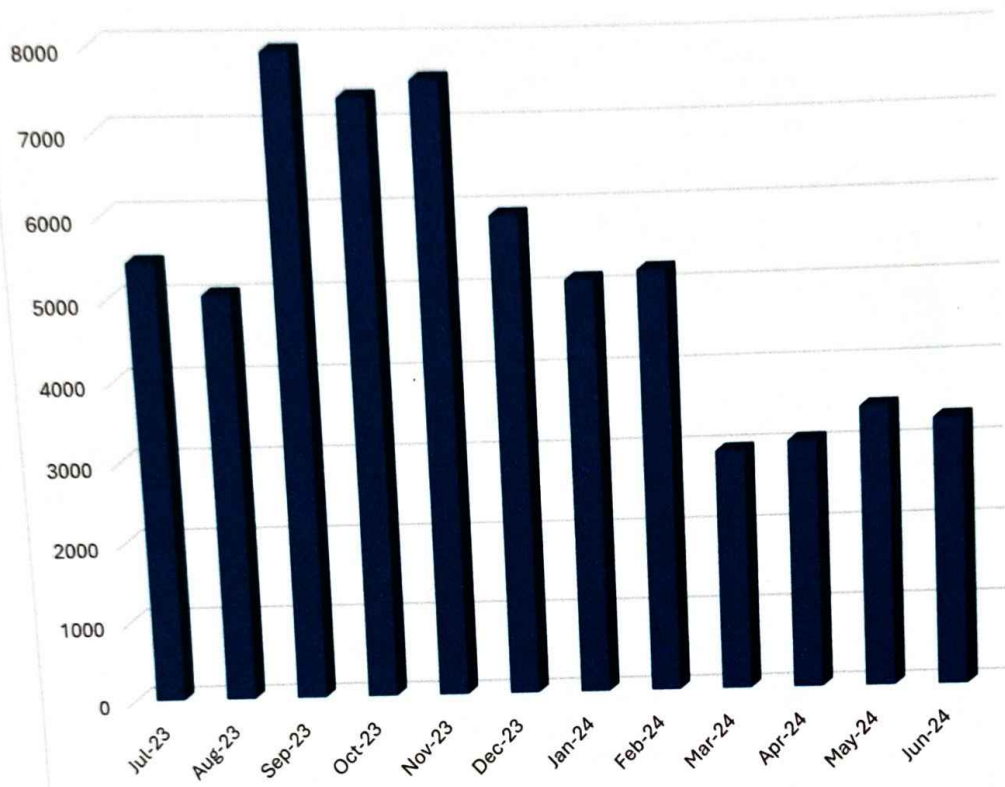


### Year-2023-24

Month	Total Consumption in Unit (KWH)
Jul-23	5432.97
Aug-23	5032.97
Sep-23	7912.65
Oct-23	7362.65
Nov-23	7562.65
Dec-23	5929.99
Jan-24	5129.99
Feb-24	5229.99
Mar-24	2981.23
Apr-24	3081.23
May-24	3481.23
Jun-24	3315
<b>Total-</b>	<b>62452.55</b>

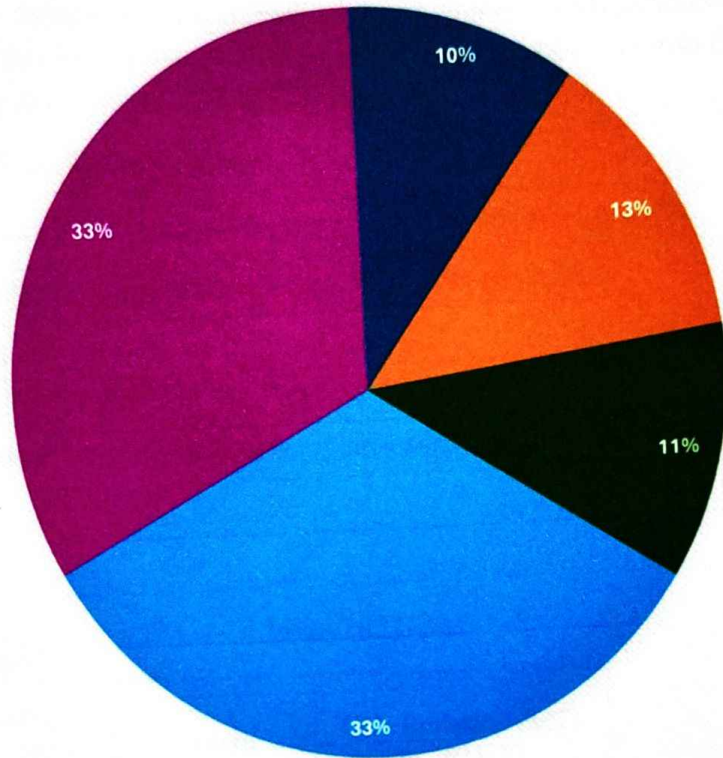


Total Consumption (KWH) 2023-2024





### MAXIMUM PERCENTAGE OF ELECTRICITY DEMAND



■ LIGHT ■ FAN ■ AC ■ COMPUTER AND ACCESSORIES ■ LAB EQUIPMENTS



### **Carbon foot printing:**

A carbon footprint is defined as the total greenhouse gas emission (CO<sub>2</sub> emission), emitted due to various activities. In this we compute the emission of CO<sub>2</sub>, by use of the various form of electrical energy used by the college for performing its day-to-day activities.

### **Basis for computation of CO<sub>2</sub> emissions:**

The basis of calculation for CO<sub>2</sub> emissions due to electrical energy is as under

1 unit (kWh) of electrical energy releases 0.8kg of CO<sub>2</sub> into atmosphere.

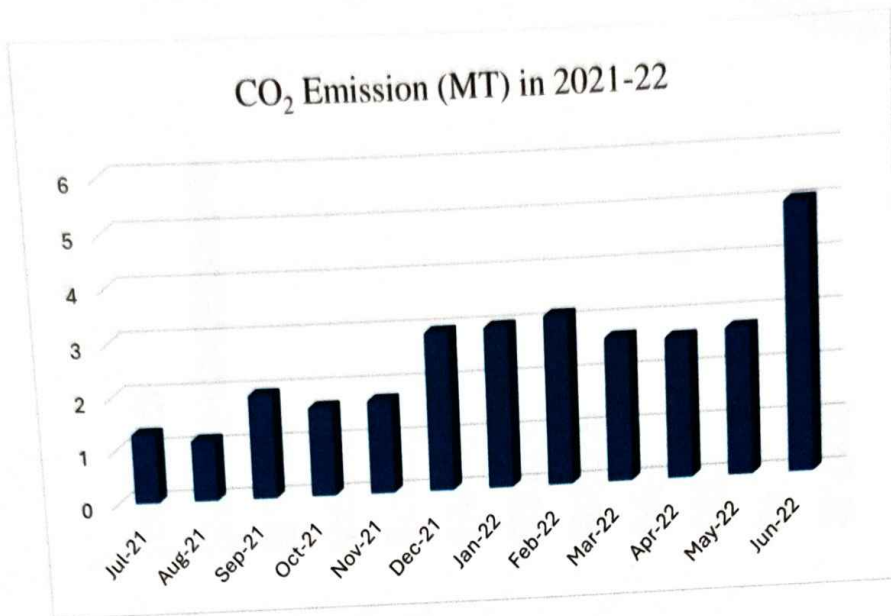
Based on the above data we compute the CO<sub>2</sub> emissions which are being released into the atmosphere by the college due to its day-to-day operations.

### **Month wise consumption of electrical energy and emissions (MT) in 2021-2022:**

#### **Year-2021-22**

<b>Month</b>	<b>CO<sub>2</sub> Emission (MT) in 2021-22</b>
Jul-21	<b>1.29</b>
Aug-21	<b>1.13</b>
Sep-21	<b>1.93</b>
Oct-21	<b>1.66</b>
Nov-21	<b>1.74</b>
Dec-21	<b>2.96</b>
Jan-22	<b>2.99</b>
Feb-22	<b>3.16</b>
Mar-22	<b>2.68</b>
Apr-22	<b>2.62</b>
May-22	<b>2.74</b>
Jun-22	<b>5.03</b>



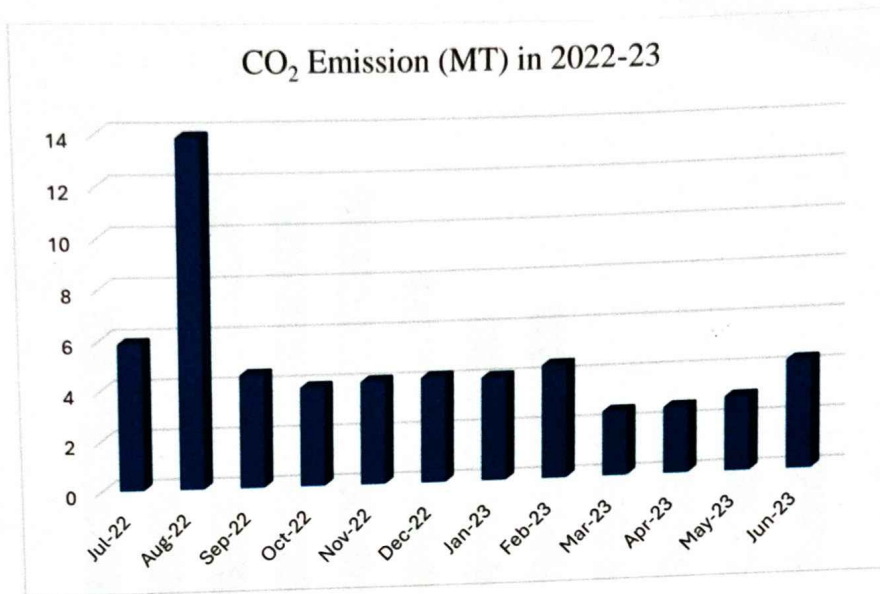


**Month wise consumption of electrical energy and emissions (MT) in 2022-2023:**

**Year-2022-23**

Month	CO <sub>2</sub> Emission (MT) in 2022-23
Jul-22	5.83
Aug-22	13.83
Sep-22	4.50
Oct-22	3.94
Nov-22	4.10
Dec-22	4.18
Jan-23	4.10
Feb-23	4.50
Mar-23	2.55
Apr-23	2.63
May-23	2.95
Jun-23	4.32





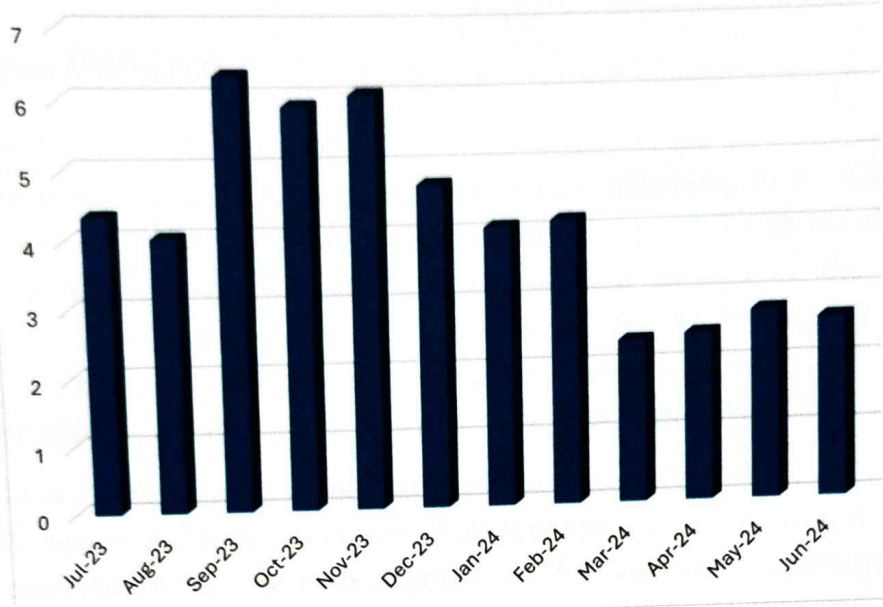
**Month wise consumption of electrical energy and emissions (MT) in 2023-2024:**

**Year-2023-24**

Month	CO <sub>2</sub> Emission (MT) in 2023-24
Jul-23	4.35
Aug-23	4.03
Sep-23	6.33
Oct-23	5.89
Nov-23	6.05
Dec-23	4.74
Jan-24	4.10
Feb-24	4.18
Mar-24	2.38
Apr-24	2.46
May-24	2.78
Jun-24	2.65



CO<sub>2</sub> Emission (MT) in 2023-24



### **Results and Discussion:**

An energy audit is an analysis of a facility, indicating how and where that facility can reduce energy consumption and save energy costs to insight to energy efficiency and conservation can lead to significant savings on the institution's utility bill. In an attempt of this we have collected data by considering the total no of tube lights, fans, computers printers, AC's and other electrical instruments together with the electrical unit that each of the equipment would consume.

In our college, most of the computer and accessories required 33.35% out of the total energy, AC required 11.05%, Lab equipment's require 32.63% while some other equipment's like the Fans required 12.75% and light required 10.22%. The maximum total required monthly energy for our entire Institution was 303.673kW, and the analysis predicts the contribution of tube lights, fan computers, printers, AC's, Monitors and other instruments in total use of energy allocation percentage wise. As the college is open during day time tube light usage is not required and classes were taken with the help of sunlight coming through the windows. It is reflected in the monthly usage of electricity which is lesser than the demand throughout all three years.





### Energy Saving through LED:

We can use LED bulbs to save more electricity. The electrical devices which are connected in college campus are not energy saving devices. These devices can be replaced by electrical efficient appliances. Now-a-days, low wattage appliances are used in building. they are productive in saving electricity. Some appliances are replaced by energy saving appliance which are as follows.

- 1) Total No. of conventional Tube Lights in Campus: 1002
- 2) Conventional Tube Light average:36W
- 3) LED Tube Light average power:20W
- 4) Difference in power saved per tube light:  $(36-20) W=16W$   
 $1002 \times 16 = 16032W = 16.032kW$
- 5) Average use of Tube light per year:  $430 \times 8h = 3440h$
- 6) Energy saved per year:  $3440 \times 16.032 = 55150.08kWh$

Hence, we can save a lot of energy per year by replacing the CFL. Tubelights by LED tube lights. The cost of LED tube lights will be paid back from the saved electricity bill.







## SUGGESTIONS:

It is observed that some of the electrical devices which are connected the college campus are not energy saving devices and therefore these devices should be replaced by electrical efficient appliances as they are productive in saving electricity by lowering the electrical consumption. Some appliances may be replaced by energy saving appliances such as:

1. All the existing Tubes and CFL's should be replaced by LEDs step by step.
2. Normal Fans and Wall fans should also be replaced by 5 star Fans.
3. Normal PC's may also be replaced by 7 gen PC's if possible.
4. In future all electronic equipment such as AC, Fan, Light with high energy efficiency level (preferentially 4 or 5 star) should be purchased.
5. Separate electrical connection of administrative office. Computer Labs and classrooms should be taken.
6. There should be Master switches for each Room to shut down power of entire room when not in use.
7. It may be noted here that in pre pandemic time, the electricity consumption of college building was quite high. In this context it can be recommended to use renewable energy as alternative source of energy in the college.

**Inference:** Ultimately, the data generated in energy audit gave a clear picture of the energy distribution and utilization of power in the college. On the whole, the college needs maximum of 303.673 kW of electrical energy per month.

  
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